

**STATE OF ILLINOIS  
ILLINOIS COMMERCE COMMISSION**

Illinois Commerce Commission,	:	
On its own Motion,	:	
	:	Dkt. No. 06-0525
Consideration of the federal standard	:	
On Interconnection in Section 1254 of the	:	
Energy Policy Act of 2005.	:	

**VERIFIED COMMENTS OF THE CITY OF CHICAGO**

Pursuant to Section 5-40 of the Illinois Administrative Procedure Act (5 ILCS 100/5-40) and the schedule established by the Illinois Commerce Commission (“Commission” or “ICC”) at the March 19, 2008 status hearing in this docket, the City of Chicago (“City”), by its attorney, Mara S. Georges, Corporation Counsel, submits its Verified Comments respecting proposed Part 466 of the Commission’s rules, which was issued as Appendix B of the Commission’s March 26, 2008 Order in this proceeding and published in the Illinois Register on April 18, 2008. Illinois Register, proposed ICC Rule 83 Ill. Adm. Code 466, 32 Ill. Reg. Vol. 32, Issue 16, 6556 (“Part 466”).

**INTRODUCTION**

At the completion of a productive workshop process conducted by the Staff of the Commission, many issues of concern to potential interconnection customers -- particularly small customers -- were fairly addressed in proposed Part 466. Indeed, the City believes that the workshop process yielded a detailed rule, which the City supports as superior to retaining individual utility definitions of applicable interconnection standards and procedures. In particular, the City supports the proposed rule, with the modest modifications described below.

Historically, utility customers seeking to interconnect distributed generation (“DG”) facilities that operate in parallel with the distribution system of the local electric distribution company (“EDC”) were confronted with an uncharted gauntlet of utility technical requirements, administrative processes, and financial hurdles that varied from utility to utility. The certainty, transparency, and consistency essential to widespread implementation of DG projects were absent. Recently, with more accessible publication of utility requirements and internet access to more of the required information, the application process has significantly improved. However, meaningful, enforceable customer rights and the certainty on technical, procedural and financial matters necessary for widespread DG growth are still lacking. The transparency and certainty provided by the existence of a Commission rule are as important to potential DG users as the rule’s details on technical and procedural requirements.

### **COMMENTS ON PART 466 SECTIONS**

The comments that follow address selected provisions of proposed Part 466 that remain problematic. The issues those provisions raise are discussed in individually captioned paragraphs.

#### **Sections 466.60(h) and (i) -- General Requirements**

Sections 466.60(h) and (i) require a lockable, isolation device that is accessible by the local EDC and located electrically between the generation facility and the point of interconnection. Such equipment is appropriate only when a generator connects directly to the EDC system. Most distributed generation facilities -- particularly small facilities such as photovoltaic (“PV”) equipment -- will connect to the customer's secondary switchgear. In such

cases, there should be no need for a separate isolating switch -- provided that the customer's service can be isolated by a complete service disconnect.

The requirement for a separate disconnect device has been advanced on the basis of arguments that a separate isolating device is required for the safety of EDC line crews or emergency response personnel and that such a device is a means of isolating the source of backfeed. However, effecting isolation at the main service provides a superior level of safety than isolation at the generation facility. Moreover, the decision about whether interrupted service to the entire premises is acceptable when the generation facility must be isolated is a choice that should be made by the customer, not by the utility or these interconnection procedures.

The technical need for separate switches is increasingly questioned by experts in the field. A recent technical report from the National Renewable Energy Laboratory concludes that such requirements may be an unnecessary barrier to DG expansion. Among the report's findings or conclusions are the following.

- > Put simply, the utility-accessible EDS is increasingly viewed as redundant and unnecessary for residential and small-commercial PV systems with UL-listed inverters.
- > Eight state PUCs (i.e., Arkansas, Delaware, Florida, Maryland, Nevada, New Jersey, New Hampshire, and Utah) have eliminated their EDS requirements for systems that meet criteria.
- > In the states with utility choice, at least five utilities have eliminated the EDS requirement. These states and utilities accounted for more than 80% of total installed PV capacity in the United States in 2006.

Coddington, Margolis, and Aabakken, Utility-Interconnected Photovoltaic Systems: Evaluating the Rationale for the Utility-Accessible External Disconnect Switch, Technical Report NREL/TP-581-42675, January 2008, Conclusion.

The City recommends these provisions of proposed Part 466 be amended to eliminate -- for small customers (Level 1) -- the requirement for a separate lockable isolation device where the customer elects to have its meter or service serve as the isolation device. Where the customer's comparative assessment of possible service interruptions and the expense of a separate isolation device lead it to accept interruptions when required for the safety of EDC or emergency response personnel or the distribution system, Part 466 should not require otherwise. The following modifications would accomplish this accommodation of customer choice -- but only in circumstances that do not endanger persons or the distribution system.

h) EDCs can require that distributed generation facilities have the capability to be isolated from the EDC. For distributed generation facilities interconnecting to a primary line, the isolation shall be by means of a lockable, visible-break isolation device accessible by the EDC. For distributed generation facilities interconnecting to a secondary line, the isolation shall be by means of a lockable isolation device whose status is indicated and is accessible by the EDC or by means of the arrangement described in (i) below. The isolation device shall be installed, owned and maintained by the owner of the distributed generation facility and located electrically between the distributed generation facility and the point of interconnection. A draw-out type circuit breaker accessible to the EDC with a provision for padlocking at the draw-out position satisfies the requirement for an isolation device.

i) The interconnection customer shall allow the EDC to isolate the distributed generation facility, to prevent adverse system impacts. An interconnection customer may elect to provide the EDC access to an isolation device that is contained in a building or area that may be unoccupied and locked or not otherwise accessible to the EDC by installing a lockbox provided by the EDC that allows ready access to the isolation device. The lockbox shall be in a location determined by the EDC to be accessible by the EDC. The interconnection customer shall permit the EDC to affix a placard in a location of its choosing that provides instructions to EDC operating personnel for accessing the isolation device. If a Level 1 applicant does not elect to provide a separate isolation device, the EDC may disconnect its meter to isolate the generating facility. If the EDC needs to isolate the distribution generation

facility, the EDC shall not be held liable for any damages resulting from the actions necessary to isolate the generation facility.

Section 466.60(k) -- General Requirements

Proposed Section 466.60(k) gives an EDC authority to monitor and control a DG facility rated in excess of 2 MW. Such requirements can lead to unnecessary costs to the DG customer if it is required to pay for SCADA and transfer trip facilities.

If a DG facility is equipped both with local controls to prevent the export of energy and with reverse power protection to disconnect generation if the power export controls fail, this requirement is unnecessary. Monitoring and control of a DG facility are necessary only if the export of power from the DG facility will exceed a certain level that can be accommodated safely by the line to which it is connected. The City favors a cut-off (for EDC monitoring and control) based on the exported power as a percentage of the capacity of the line section. For example, the limit could be set at 15% of the rating of the line section. The current language can be interpreted to grant the EDC discretion to require transfer tripping unconstrained by any objective limitation in these rules. The last sentence of proposed Section 466.60(k) should be deleted.

Section 466.80(a)(2) -- Determining the Review Level

The City recognizes the prevalence of simple size limitations for Level 1 review. In particular, 10 kW has become the most common ceiling. If the Commission retains a simple size limitation, the City supports an increase in the limit from 10 kW to 40 kW, as other DG advocates have suggested.

However, a more appropriate method for determining Level 1 review is the size of the generation facility in relation to the rating of the customer's service drop. For example, a

customer taking service at 200 amperes that connects a 10 kW single-phase generator would be connecting generation totaling 20% of his service. However, a customer connecting a 40 kW three-phase generator in an industrial facility that takes service at 1,000 A, 480 V would be connecting generation totaling less than 5% of his service. In our opinion, a 10 kW threshold works well in the first example, but even the 40 kW threshold is too low for the second. While due regard for the safety and reliability of the distribution system is appropriate, the Commission's rules should not elevate administrative simplicity above the need to avoid unnecessary burdens on DG installations in circumstances that do not require them.

Section 466.80(c) -- Determining the Level of Review

The City encourages the development of Level 1-3 procedures for connecting generation facilities to area networks. Large consumers of energy, including those connected to area networks like those serving the downtown section of Chicago, should be able to install PV and small generation in their buildings without a Level 4 review. However, the Rule essentially limits Level 3 review to PV systems (i.e., those using inverter equipment) rated less than 50 kW. Generation facilities using stored energy technology or that have inverter control technology can control the output of the generation facilities to preclude an accidental export of power to the network. Also, in those cases where rotating generation is tied into a process where the load and generation are started and stopped simultaneously, the risk of exporting power into the area network is slim, and protection using reverse power relays should be adequate.

Section 466.100(a)(1) -- Level 2 Expedited Review

This provision defines alternative adverse system impact screens for Level 2 expedited review. The first screen requires that the proposed generation load not exceed "50% of the

minimum normal load” supplied to the distribution circuit, configured in a normal manner. The secondary screen, “15% of the maximum load supplied to the distribution circuit,” applies only if minimum normal load values are unavailable.

However, the secondary (percentage of maximum load) criterion is the superior screen. As the language of the rule suggests, “minimum normal load” is not an easily determined value. Despite the provision’s primary reliance on minimum load, it is still unclear how "minimum normal load" will be measured. Using 15% of the line section annual peak load as the primary benchmark for Level 2 Expedited Review is a more reliable approach. Annual peak load can be used to establish the capacity of a line section, making it a more appropriate method for assessing the impact of generation facilities on the EDC distribution system. It is also much simpler to define and measure the annual peak load than it is the "minimum normal load."


A benchmark of 15% of the line section annual peak load is a better measure, because the capacity of the line section is a more appropriate basis for assessing the impact of DG facilities on the distribution system. If this percentage measure is not defined as the sole screen, the provision should at least be modified by reversing the primary and secondary screens.

### **CONCLUSION**

The City requests that the Commission consider the modest revisions recommended in these herein. The proposed Part 466, modified as recommended, can facilitate the expansion of DG facilities, an objective that has been endorsed at the state and federal levels. An appropriate detailed rule establishes the rights and obligations of the parties to DG interconnection, provides the technical and procedural certainty needed for small customer participation, and removes superfluous barriers to DG implementation.

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Respectfully Submitted,



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